

II – Espectros

Tabelas

Processamento Digital de Sinais

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Sinal	Coeficientes da série de Fourier
$z(t) = \sum_{k=-\infty}^{+\infty} Z_k e^{jk\omega_0 t}$	$Z_k = \frac{1}{T_0} \int_{T_0} z(t) e^{-jk\omega_0 t} dt$
$z(t) = \sum_{n=-\infty}^{\infty} \delta(t - nT)$	$Z_k = \frac{1}{T}$
$z(t) = 1$	$\begin{cases} Z_0 = 1 \\ Z_k = 0, \end{cases} \quad k \neq 0 \quad , \quad \forall T_0 > 0$
$z(t) = e^{j\omega_0 t}$	$\begin{cases} Z_1 = 1 \\ Z_k = 0, \end{cases} \quad k \neq 1$





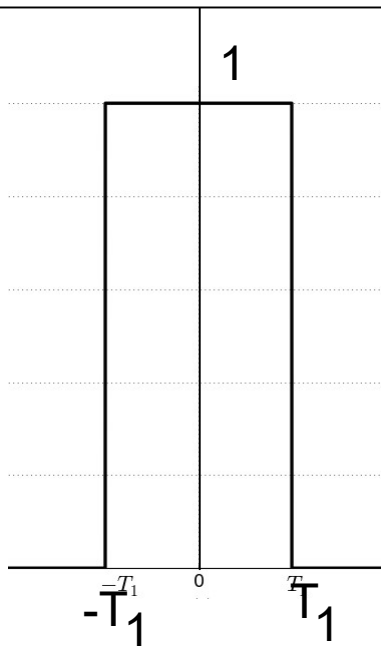
$$z(t) = \cos(\omega_0 t)$$

$$\begin{cases} Z_1 = Z_{-1} = 0.5 \\ Z_k = 0, & k \neq 1, -1 \end{cases}$$

$$z(t) = \sin(\omega_0 t)$$

$$\begin{cases} Z_1 = -Z_{-1} = \frac{1}{2j} \\ Z_k = 0, & k \neq 1, -1 \end{cases}$$

$$Z(t) = \begin{cases} 1 & , \quad |t| < T_1 \\ 0 & , \quad T_1 < |t| < \frac{T_0}{2} \end{cases}$$



$$Z_0 = \frac{2T_1}{T_0}$$

$$Z_k = \frac{2T_1}{T_0} \text{sinc}\left(k \frac{2T_1}{T_0}\right)$$



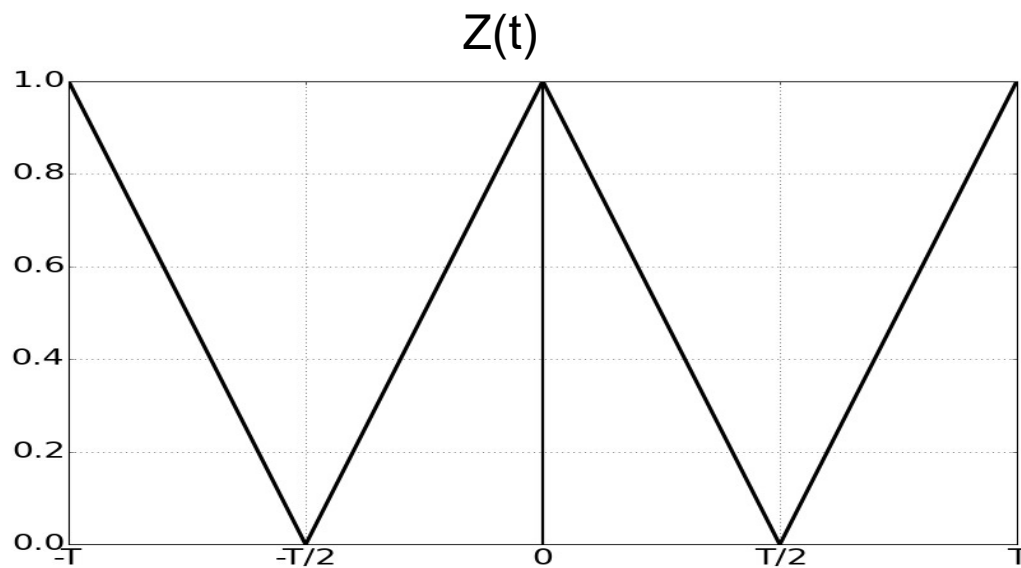


$$z(t) = u\left(t + \frac{T}{2}\right) - u\left(t - \frac{T}{2}\right)$$

$$Z_k = T \operatorname{sinc}(f_0 T)$$

$$z(t) = \sin(\omega_0 t)$$

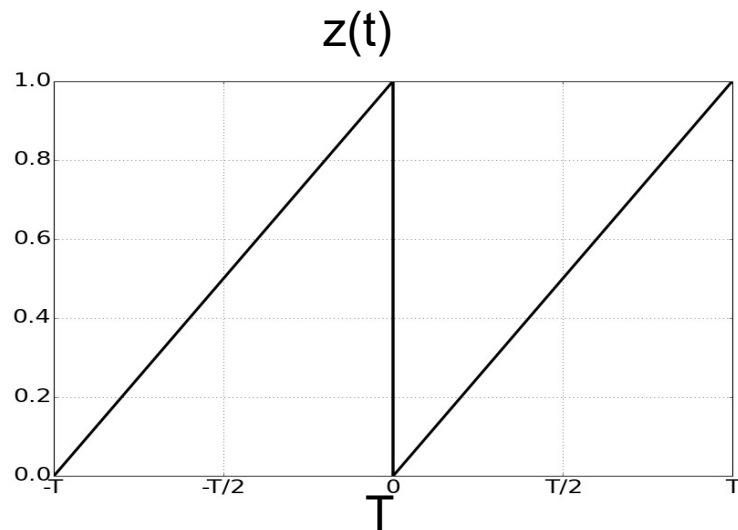
$$\begin{cases} Z_1 = -X_{-1} = \frac{1}{2j} \\ Z_k = 0, & k \neq 1, -1 \end{cases}$$



$$Z_0 = 0.5$$

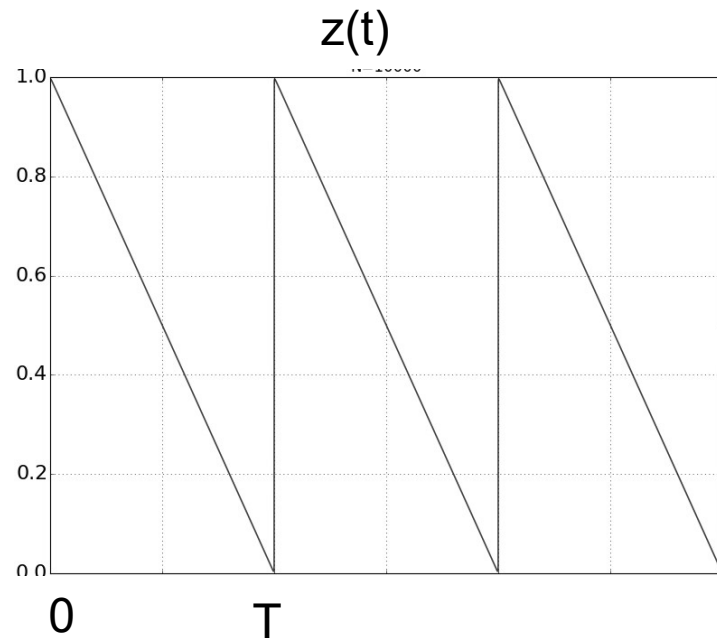
$$Z_k = \frac{1}{k^2 \pi^2} (1 - (-1)^k)$$





$$Z_0 = 0.5$$

$$Z_k = -\frac{1}{jk\pi}$$



$$Z_0 = 0.5$$

$$Z_k = \frac{1}{jk\pi}$$

